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## **BINOCULARS EQUIPPED WITH DIGITAL CAMERA**

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### **ABSTRACT**

**PROBLEM TO BE SOLVED:** To obtain small-sized light-weight binoculars equipped with a digital camera having a simplified structure by providing a mirror driving means for making a movable mirror stand by at a non-photographing position at the time of not photographing and making the mirror advance into the photographing position only at the time of photographing.

**SOLUTION:** The mirror driving motor 15 is fixed between the optical paths PL and PR of the binoculars 10, and a turning support shaft 13 is installed as the rotary shaft of the motor 15. Thus, the mirror 12 is moved to the photographing position/non-photographing position in accordance with the forward/backward rotation of the motor 15. And the motor 15 is started up by a system control part so as to move the mirror 12 from the non-photographing position to the photographing position, then, just after the end of moving the mirror 12, a CD image pickup element 14 is driven so as to start picking up an image. After the end of picking up the image, the motor 15 is started up again so as to retreat the mirror 12 from the photographing position to the non-photographing position. Thus, it is unnecessary to install an ND filter in the optical path on the side where the movable mirror 12 is not installed of an observation optical system, then, the binoculars can be made small in size and light in weight.

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**Movable mirror drive controller for binocular equipped with digital camera - includes movable mirror which is moved along optical path by drive motor during photography and maintained in standby state, while not taking photograph**

Patent Assignee: ASAHI OPTICAL CO LTD (ASAO)

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Patent Family ( 1 patents, 1 countries )

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## Patent Details

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JP 11064741	A	JA	8	5		

## Alerting Abstract JP A

**NOVELTY** - The optical system has a pair of objective lenses (11L,11R) and eyepieces (18L,18R). The movable mirror (12) arranged between objective lens and eyepiece is moved along the optical path by a drive motor at the time of photography and is maintained in standby state while not taking the photograph. **DETAILED DESCRIPTION** - The image pick-up element (14) receives the light reflected from the mirror directly and reflects it to the eyepiece lens. A poloprism (17L) is positioned between objective and eyepiece lens, to get erect images.

USE - For binocular equipped with digital camera.

**ADVANTAGE** - Size reduction and weight reduction is achieved. Obtains erected image. Offers freedom of arrangement of image pick-up element or any optical member. **DESCRIPTION OF DRAWING(S)** - The figure shows perspective diagram showing principal parts of the optical system arrangement of binocular. (11L,11R) Objective lenses; (12) Movable mirror; (14) Image pick-up element; (17L) Poloprism; (18L,18R) Eyepieces.

**Title Terms /Index Terms/Additional Words:** MOVE; MIRROR; DRIVE; CONTROL; BINOCULAR; EQUIP; DIGITAL; CAMERA; OPTICAL; PATH; MOTOR; PHOTOGRAPH; MAINTAIN; STANDBY ; STATE

## Class Codes

## International Patent Classification

IPC	Class	Level	Scope	Position	Status	Version	Date
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H04N-0005/225	A	I	L	R	20060101		

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#### **BINOCULARS EQUIPPED WITH DIGITAL CAMERA**

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